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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,369	09/22/2003	Hee-Sok Pang	053785-5151	4918
9629	7590	11/30/2004	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			RIELLEY, ELIZABETH A	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/665,369

Applicant(s)

PANG ET AL.

Examiner

Elizabeth A. Rielley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6, 8, 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoskawa (US 20020011783) in view of Watanabe (US 3622829).

1. In regard to claim 1, Hoskawa ('783) teaches a transmissive-type organic electroluminescent display device (61-67) comprising a substrate (10) including sub-pixel regions thereon (31; paragraph 14), an array element in each sub-pixel area that includes thin film transistors (14); a partition wall at a border portion between adjacent sub-pixel regions made of an insulating material (25; figure 3; paragraph 160); a first electrode (22) made of a transparent conductive material in each sub-pixel region between adjacent partition walls (paragraph 21); an organic electroluminescent layer on the first electrode in each sub-pixel region between the adjacent partition walls (24); a second electrode (20) made of a transparent conductive material on the organic electroluminescent layer (paragraph 14); and a passivation layer covering the second electrode (58; figure 8; paragraphs 93 and 94). Hoskawa ('783) does not teach that the partition

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wall is made of a transparent material. Watanabe ('829) teaches a partitioning wall made of a insulating and a transparent material (column 2 lines 30-35) It would have been obvious at the time of the invention to one of ordinary skill in the art to combine Watanabe's ('829) transparent wall with Hoskawa's ('783) EL device in order to produce a brighter display device.

2. In regard to claim 2, Hoskawa ('783) teaches the organic electroluminescent layer is made of a high molecular material (paragraphs 116-117).

3. In regard to claim 3, Hoskawa ('783) teaches the partition wall forms an opening having a rectangular shape corresponding to the sub-pixel region (figure 4b; paragraphs 151-152).

4. In regard to claim 6, Hoskawa ('783) teaches the partition wall is formed only in a first direction at a border portion between adjacent sub-pixels (figure 3).

5. In regard to claim 8, Hoskawa ('783) teaches the organic electroluminescent layer is formed by an ink jet method (paragraph 287).

6. In regard to claim 9, Hoskawa ('783) teaches a method of forming a fluorescent layer by roll coating (paragraph 244).

7. In regard to claim 10, Hoskawa ('783) teaches the partition wall made of an organic material (paragraph 202). Watanabe ('829) teaches a partitioning wall made of a insulating and a transparent material (column 2 lines 30-35). Motivation for combining is the same as above.

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8. In regard to claim 11, Hoskawa ('783) teaches the first electrode is an anode electrode (paragraph 190) and the second electrode is a cathode electrode (paragraph 166), where in the second electrode includes a metallic thin film having a low work function contacting the organic electroluminescent layer (paragraphs 166 and 168).

9. In regard to claim 12, Hoskawa ('783) teaches the metallic thin film includes aluminum (paragraph 168).

10. In regard to claim 13, Hoskawa ('783) teaches an electrode made of indium zinc oxide (paragraph 138).

11. In regard to claim 14, Hoskawa ('783) teaches a transmissive-type organic electroluminescent display device comprising a substrate (10) including sub-pixel regions (31); a first electrode (22) made of a transparent conductive material (paragraph 21); a partition wall (25) made of an insulating material at a border portion between adjacent sub-pixel regions (figure 3; paragraphs 14 and 160); an organic electroluminescent layer in each sub-pixel region (24) between adjacent partition walls; and a second electrode (20) made of a transparent conductive material (paragraphs 21 and 93-94) on the organic electroluminescent layer between the adjacent partition walls (figure 3). Hoskawa ('783) does not teach that the partition wall is made of a transparent material. Watanabe ('829) teaches a partitioning wall made of an insulating and a transparent material (column 2 lines 30-35). It would have been obvious at the time of the invention to one of ordinary skill in the art to combine Watanabe's ('829) transparent wall with Hoskawa's ('783) EL device in order to produce a brighter display device.

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12. In regard to claim 15, Hoskawa ('783) teaches both electrodes made of indium zinc oxide (paragraphs 38, 138 and 191).

13. In regard to claim 16, Hoskawa ('783) teaches a method of fabricating a transmissive type organic electroluminescent device comprising: forming array elements having thin film transistors (14) in a sub-pixel regions (31) or a substrate (10; paragraph 14); forming a partition wall (25) at a border portion between adjacent sub-pixel regions (paragraph 160), that partition wall being made of an insulating material (paragraph 160); forming a first electrode in each sub-pixel region between adjacent partition walls (paragraph 160), the first electrode being made of a first transparent conductive material (paragraph 21); forming an organic electroluminescent layer (24) on the first electrode between the adjacent partition walls, the organic electroluminescent layer being made of a high molecular material (paragraphs 116-17, 93); forming a second electrode on the entire substrate (paragraph 93 and 43), mad of a second transparent conductive material (paragraph 21); and encapsulating the substrate (58; figure 8) including the second electrode by forming a passivation layer there on (paragraph 69). Hoskawa ('783) dose not teach that the partition wall is made of a transparent material. Watanabe ('829) teaches a partitioning wall made of a insulating and a transparent material (column 2 lines 30-35) It would have been obvious at the time of the invention to one of ordinary skill in the art to combine Watanabe's ('829) transparent wall with Hoskawa's ('783) EL device in order to produce a brighter display device.

14. In regard to claim 17, Hoskawa ('783) teaches the organic electroluminescent layer is formed by an ink jet method (paragraph 287).

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15. In regard to claim 18, Hoskawa ('783) teaches the partition wall made of an organic material (paragraph 202). Watanabe ('829) teaches a partitioning wall made of a insulating and a transparent material (column 2 lines 30-35). Motivation for combining is the same as above.

16. In regard to claim 19, Hoskawa ('783) teaches both electrodes made of indium zinc oxide (paragraphs 38, 138 and 191).

17. Claims 4, 5, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoskawa ('783) in view of Watanabe ('829) as applied to claim 1 above, and further in view of Morii et al (US 20020109456).

18. In regard to claim 4, Hoskawa ('783) in view of Watanabe ('829) discloses all the limitations set forth, as described above, except that the partition wall forms an opening having a circular shape corresponding to the sub-pixel region. Morii ('456) teaches the partition wall forming an opening having a circular shape corresponding to the sub-pixel region (paragraph 47; figure 1). It would have been obvious at the time of the invention to combine Hoskawa ('783) in view of Watanabe ('829) and in further view of Morii et al ('456) so that the ink lies well in the sub-pixel sections (paragraph 47).

19. In regard to claim 5, Hoskawa ('783) teaches the organic electroluminescent layer is formed by an ink jet method (paragraph 287).

20. In regard to claim 9, Hoskawa ('783) in view of Watanabe ('829) discloses all the limitations set forth, as described above, except the partition wall has a thickness within a range of 1  $\mu\text{m}$  to 8  $\mu\text{m}$ . Morii

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et al ('456) teaches the thickness of an organic partition wall is 2  $\mu\text{m}$ . Motivation for combining is the same as above.

21. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoskawa ('783) in view of Watanabe ('829) as applied to claim 1 above, and further in view of Shi et al (US 6107736).

22. Hoskawa ('783) in view of Watanabe ('829) discloses all the limitations set forth, as described above, except a roll coating method forms the organic electroluminescent layer. Shi et al ('736) teaches forming an electroluminescent layer by a roll coating method. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Hoskawa ('783) in view of Watanabe ('829) and in further view of Shi et al ('736) in order to apply the electroluminescent layer more accurately.

### *Conclusion*

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained



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from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Elizabeth Rielley

**Examiner**  
**Art Unit 2879**

  
**VIP PATEL**  
**PRIMARY EXAMINER**